intensity of the signal output of a spectrophotometer is represented as a function of its wavenumber, wavelength or time are prepared letting n and m (n ≠ m) be a positive integer, the n-th and m-th derivatives with respect to wavenumber, wavelength or time of intensity on the spectral profile on the said spectral data are calculated, points on the two-dimensional coordinate plane as the X-Y coordinate system whose X-coordinate is the said n-th derivatives and whose Y-coordinate is the said m-th derivatives respectively, on the said two-dimensional coordinate plane are plotted, and a two-dimensional derivative plot on the said spectral data is prepared the specific characteristic information on the said spectral data are obtained based on the said two-dimensional derivative plot <u>comprising;</u>

<u>(A) a step</u> wherein based on the said characteristic information, at least one component band is estimated after the band parameter values regarding at least one component band among the component bands contained in the spectral profile of the analyzed object are estimated,

<u>(B) a step wherein</u> the two-dimensional derivative plot with a specific component band removed is obtained by clearing a specific component band or specific component bands already estimated or the two-dimensional derivative plot from th spectral profile or a two-dimensional derivative plot of the analyzed object,

<u>(C) a step wherein</u> specific characteristic information based on the two-dimensional derivative plot with this specific component removed is obtained, and band parameter values on remaining component bands are estimated based on the said characteristic information, and ~~the estimation of at least one of the other component bands is iterated, component bands are~~ ~~estimated in order, thereby estimating the component band which comprises a spectral profile of~~ ~~the analyzed object~~

<u>(D) a step wherein the already estimated band parameter vales are so adjusted that the already estimated specific component band and the complementary estimation component band</u>

with the estimated component band removed except the said estimated specific component band from a spectral profile or two-dimensional derivative plot of the analyzed object coincide with each other,

and after estimated the component band which comprises a spectral profile of the analyzed object by estimating component bands in order iterating steps (A) to (C), adjusting the already estimated parameter values by a step (D).

AMENDMENT OF ABSTRACT

Please substitute the following abstract:

The present invention relates to a method for extracting individual band components from heavily overlapping bands. The method is based on first derivative-second derivative plots of an experimental spectrum and consists of two stages. The first stage is concerned with the geometric approach that estimates a set of values for the parameters of a component band in the overlapping bands, and repeats band decomposition of the remaining bands in the same manner after removing the estimated band from the overlapping bands. The second stage is to minimize the difference between the profiles of the estimated band and its complementary band by a least-squares optimization, and then to determine the optimum values of the band parameters.

REMARKS

Favorable reconsideration of this application is requested in view of the following remarks. Claims 1-7 pending in the present application. For the reasons stated below Applicants' respectfully maintain that the claims as amended are allowable over the cited references.